



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/691,745	10/23/2003	Delmar Bleckley	PB400002	7748

7590 03/29/2007
PHILIP H. BURRUS, IV
460 GRANT STREET
ATLANTA, GA 30312

EXAMINER

SELBY, GEVELL V

ART UNIT	PAPER NUMBER
----------	--------------

2622

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/29/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No. 10/691,745	Applicant(s) BLECKLEY ET AL.	
	Examiner Gevell Selby	Art Unit 2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 October 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date ____ | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Specification

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Drawings

2. The drawings are objected to because the lines and text are not uniform widths, height, or fonts. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 5 and 7-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 5 and 7-20, claim the limitation of a “second shutter”; however, a first shutter is not claimed. The claim is indefinite failing to claim a first shutter, because it is impossible for the device to have a second shutter if it does not comprise a first.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

6. **Claim 1-3, 5-8, 13, 14, and 16-19 are rejected under 35 U.S.C. 102(a) as being anticipated by Cameron et al., US 6,565,448.**

In regard to claim 1, Cameron et al., US 6,565,448, discloses a system for measuring geometric relationships of components associated with a body in motion, comprising:

- a. a means for generating an electronic image (see figure 1, elements 20, 22, 24, 26, and 28 and column 3, lines 13-62);

b. a triggering means coupled to the means for generating (see column 5, lines 21-24 and column 6, lines 14-21: training software trigger function);

c. a computer means coupled to the means for generating, the computer means being capable of storing the electronic image (see figure 1, element 30 and column 2, line 64 to column 3, line 19);

d. a software means running on the computer means (see column 6, lines 4-27), the software means being capable of measuring a geometric relationship between at least two elements of the electronic image (see column 6, line 55 to column 7, line 18 and column 10, line 51 to column 11, line 20).

In regard to claim 2, Cameron et al., US 6,565,448, discloses the system of claim of claim 1, wherein the body in motion comprises a person (see figure 7, element 10), and at least one of the at least two elements is a head (see column 10, line 51 to column 11, line 20).

In regard to claim 3, Cameron et al., US 6,565,448, discloses the system of claim 2, wherein the person is swinging a golf club, and at least one of the at least two elements is a club head (see column 10, lines 6-38) or a golf club shaft (see column 6, line 55 to column 7, line 18).

In regard to claim 5, Cameron et al., US 6,565,448, discloses the system of claim 1, wherein the means for generating comprises:

a. a video camera (see figure 1, element 22); and

b. a second shutter (see figure 1, element 26: it is inherent camera 21 has a first shutter and camera 26 has a second shutter);

wherein the triggering means actuates the second shutter (see column 5, lines 17-20 and column 10, lines 6-13: the trigger activates the shutter to capture the image).

In regard to claim 6, Cameron et al., US 6,565,448, discloses the system of claim 1, wherein the means for generating comprises:

- a. a video camera (see figure 1, element , 22, 24, 26, or 28).

The Cameron reference does not disclose a strobe light, wherein the triggering means actuates both the video camera and the strobe light.

Weber et al., US 5,792,000, discloses a camera (see figure 1, element 20) and a strobe light (see figure 1, element 22), wherein the triggering means (see figure 1, elements 14 and 18) actuates both the camera and the strobe light (see column 3, lines 8-13 and column 5, lines 56-64).

It would have been obvious to one of ordinary skill in the art at the time of invention to have been motivated to modify Cameron et al., US 6,565,448, in view of Weber et al., US 5,792,000, to have a strobe light, wherein the triggering means actuates both the video camera and the strobe light, in order to properly illuminate the golfer during image capture to achieve a higher quality image

In regard to claim 7, Cameron et al., US 6,565,448, discloses a system for measuring spatial relationships relative to a body in motion, comprising:

- a. a video camera (see figure 1, element 26), the video camera having an image capture rate (see column 10, lines 6-14: the image capture rate captures images before and after the contact of ball and club);

b. a second shutter (see figure 1, element 22: it is inherent camera 26 has a first shutter and camera 22 has a second shutter), the second shutter having a shutter speed that is not equal to the image capture rate (see column 6, lines 55-64: the shutter speed of the second shutter does not match the frame rate of the video camera 22, since the second activates at the ball strike instead of before and after);

c. a means for actuating the second shutter (see column 5, lines 21-24 and column 6, lines 14-21: training software trigger function); and

d. a means for displaying a video image coupled to the video camera (see figure 1, element 32, figure 4, figure 7).

In regard to claim 8, Cameron et al., US 6,565,448, discloses the system of claim 7, further comprising software means for making spatial measurements between at least two elements of the video image (see column 6, lines 4-27, column 6, line 55 to column 7, line 18 and column 10, line 51 to column 11, line 20).

In regard to claim 13, Cameron et al., US 6,565,448, discloses the system of claim 12, wherein the body in motion comprises a person executing a physical motion (see column 10, lines 6-13).

In regard to claim 14, Cameron et al., US 6,565,448, discloses the system of claim 13, wherein the body in motion comprises a golfer making a golf swing (see column 10, lines 6-13).

In regard to claim 16, Cameron et al., US 6,565,448, discloses the system of claim 7, wherein the means for displaying comprises a computer, further wherein the software

means comprises video imaging software that allows a user to create a graphic overlay atop the video image (see figures 4 and 7), and further allows the user to take angular or linear measurements between components of the graphic overlay (see column 6, lines 65 to column 7, line 18 and column 11, lines 51-61).

In regard to claim 17, Cameron et al., US 6,565,448, discloses the system of claim 7, wherein when the means for actuating actuates the second shutter (the shutter of camera 26 is read on as the second shutter since either shutter can interchangeably read on the second shutter of claim 7 while the other shutter reads on the first shutter), the second shutter opens at least a first (image capture before ball strike) and a second (image capture after the ball strike) times, with a predetermined time interval between the at least a first and the at least a second time, wherein the video camera generates at least a first and a second image (see column 10, lines 6-14).

In regard to claim 18, Cameron et al., US 6,565,448, discloses the system of claim 7, further comprising a mechanical measurement device (see column 10, lines 59-61: the line function serves as a ruler to measure the distance the head moves).

In regard to claim 19, Cameron et al., US 6,565,448, discloses the system of claim 7, wherein the spatial relationship is angles or position (see column 10, lines 6-61).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 4 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cameron et al., US 6,565,448.

In regard to claim 4, Cameron et al., US 6,565,448, discloses the system of claim 3. The Cameron reference does not disclose wherein the at least two elements comprise an arm leading a golf swing and the club shaft, further wherein the geometric relationship comprises an angle between the arm leading the golf swing and the club shaft.

However, the Cameron reference does disclose analyzing a image of the putter grip side view (figure 6) to determine whether the golfer's wrists are moving or "breaking down" by eyeing whether the club is face is dragging behind the golfer's hands (see column 9, lines 13-45). The Cameron reference also discloses an angle drawing function where the user draws two lines on the image corresponding to two elements in the image for which the computer will calculate the angle between, as the case of the example the element are the club shaft and the ground (see column 7, lines 7-18). The system can also automatically determine the desired angle by identifying the two elements in the image (see column 7, lines 57-67), in order to eliminate error when drawing the angle lines. It would have been obvious to one skill in the art that the angle drawing function could be used when analyzing figure 6 to automatically calculate the angle between the golfer's leading arm and the club shaft to more accurately determine how much the golf club is behind the golfer's hands and allow the user to easily and quickly determine wrist breakdown.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to have been motivated to modify Cameron et al., US 6,565,448, wherein the at least two elements comprise an arm leading a golf swing and the club shaft, further wherein the geometric relationship comprises an angle between the arm leading the golf swing and the club shaft, in order to automatically calculate the angle between the golfer's leading arm and the club shaft to more accurately determine how much the golf club is behind the golfer's hands and allow the user to easily and quickly determine wrist breakdown.

In regard to claim 15, Cameron et al., US 6,565,448, discloses the system of claim 14, wherein the means for actuating is positioned such that the second shutter is open while a golf ball is in contact with a clubface (see column 6, lines 55-64: the second shutter activates at the ball strike). The Cameron reference does not disclose further wherein the spatial measurement comprises an angle between the golfer's leading forearm and a club shaft.

However, the Cameron reference does disclose analyzing an image of the putter grip side view (figure 6) to determine whether the golfer's wrists are moving or "breaking down" by eyeing whether the club is face is dragging behind the golfer's hands (see column 9, lines 13-45). The Cameron reference also discloses an angle drawing function where the user draws two lines on the image corresponding to two elements in the image for which the computer will calculate the angle between, as the case of the example the element are the club shaft and the ground (see column 7, lines 7-18). The system can also automatically determine the desired angle by identifying the two elements in the image

(see column 7, lines 57-67), in order to eliminate error when drawing the angle lines. It would have been obvious to one skill in the art that the angle drawing function could be used when analyzing figure 6 to automatically calculate the angle between the golfer's leading arm and the club shaft to more accurately determine how much the golf club is behind the golfer's hands and allow the user to easily and quickly determine wrist breakdown.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to have been motivated to modify Cameron et al., US 6,565,448, wherein the at least two elements comprise an arm leading a golf swing and the club shaft, further wherein the geometric relationship comprises an angle between the arm leading the golf swing and the club shaft, in order to automatically calculate the angle between the golfer's leading arm and the club shaft to more accurately determine how much the golf club is behind the golfer's hands and allow the user to easily and quickly determine wrist breakdown.

9. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cameron et al., US 6,565,448, in view of Bean et al., US 2003/0052989.

In regard to claim 9, Cameron et al., US 6,565,448, discloses the system of claim 8. The Cameron reference does not disclose wherein the second shutter is selected from the group consisting of mechanical shutters, electromechanical shutters, ferroelectric crystal shutters and liquid crystal display shutters.

Bean et al., US 2003/0052989, discloses a digital camera with plural shutters that are individually addressable and actuatable selected from electromechanical shutters (see para 29) or liquid crystal display shutters (see para. 17).

It would have been obvious to one of ordinary skill in the art at the time of invention to have been motivated to modify Cameron et al., US 6,565,448, in view of Bean et al., US 2003/0052989, to have the second shutter selected from the group consisting of mechanical shutters, electromechanical shutters, ferroelectric crystal shutters and liquid crystal display shutters, in order to capture or exclude an image in a certain portion of the image sensor to exclude a portion that might be too bright.

10. Claims 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cameron et al., US 6,565,448, in view of Manwaring et al., US 6,929,558.

In regard to claim 10, Cameron et al., US 6,565,448, discloses the system of claim 7. The Cameron reference does not disclose wherein the means for actuating comprises a sensor selected from the group consisting of electromagnetic sensors, optical sensors, electronic sensors and acoustic sensors.

Manwaring et al., US 6,929,558, discloses a trigger device 30 that uses a laser transmitter and a receiver to trigger the camera during a golf swing (see column 6, lines 11-20).

It would have been obvious to one of ordinary skill in the art at the time of invention to have been motivated to modify Cameron et al., US 6,565,448, in view of Manwaring et al., US 6,929,558, to have the means for actuating comprises a sensor selected from the group consisting of electromagnetic sensors, optical sensors, electronic

sensors and acoustic sensors, in order to automatically trigger the camera based on the motion of the golf club.

In regard to claim 11, Cameron et al., US 6,565,448, in view of Manwaring et al., US 6,929,558, discloses the system of claim 10. The Manwaring reference discloses wherein the means for actuating comprises a luminous intensity detection region (see column 6, lines 14-17: the detection device has a laser detection section).

11. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cameron et al., US 6,565,448, in view of Manwaring et al., US 6,929,558, as applied to claim 11 above, and further in view of Weber et al., US 5,792,000.

In regard to claim 12, Cameron et al., US 6,565,448, in view of Manwaring et al., US 6,929,558, discloses the system of claim 11. The Cameron and Manwaring references do not disclose wherein the image capture rate is slower than the shutter speed.

Weber et al., US 5,792,000, discloses a golf swing analysis system wherein the image capture rate is slower than the shutter speed in lower lighting conditions and a strobe can be used to provide instantaneous illumination at the trigger point (see column 5, lines 56-60).

It would have been obvious to one of ordinary skill in the art at the time of invention to have been motivated to modify Cameron et al., US 6,565,448, in view of Manwaring et al., US 6,929,558, and further in view of Weber et al., US 5,792,000, to have a trigger activated strobe and wherein the image capture rate is slower than the shutter speed, in order to capture higher quality images in lower light conditions.

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US 2006/0247070, discloses a method and device used to teach and simulate swing mechanics.

US 2003/0071910, discloses a camera system with a trigger activated shutter.

US 6,259,478, discloses a camera system with a trigger activated shutter with adjustable shutter speeds.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gevell Selby whose telephone number is 571-272-7369. The examiner can normally be reached on 8:00 A.M. - 5:30 PM (every other Friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivek Srivastava can be reached on 571-272-7304. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Application/Control Number: 10/691,745

Page 14

Art Unit: 2622

gvs



TUAN HO
PRIMARY EXAMINER